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**United States Patent** [19]

Asano et al.

[11] **Patent Number:** 5,245,386[45] **Date of Patent:** Sep. 14, 1993[54] **CONTACT CHARGING DEVICE HAVING A BRUSH RESTRICTING MEMBER**[75] **Inventors:** Masaki Asano, Amagasaki; Shuji Iino, Hirakata; Akihito Ikegawa, Sakai; Izumi Osawa, Ikeda, all of Japan[73] **Assignee:** Minolta Camera Kabushiki Kaisha, Osaka, Japan[21] **Appl. No.:** 842,925[22] **Filed:** Feb. 27, 1992[30] **Foreign Application Priority Data**

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[51] **Int. Cl.<sup>5</sup>** ..... G03G 15/02[52] **U.S. Cl.** ..... 355/219; 361/225[58] **Field of Search** ..... 355/219, 221, 210, 202; 361/221, 225, 220; 430/902[56] **References Cited****U.S. PATENT DOCUMENTS**

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*Primary Examiner*—A. T. Grimley*Assistant Examiner*—Thu Dang*Attorney, Agent, or Firm*—Burns, Doane, Swecker & Mathis[57] **ABSTRACT**

A contact charging device for charging a moving surface of an electrostatic latent image support member includes a large number of brush hairs contacting the moving surface of the electrostatic latent image support member; a brush restricting member, which is disposed upstream to the brush hairs in a moving direction of the surface of the electrostatic latent image support member and contacts the brush hairs; and a brush holder member holding the brush hair group, the holder member being electrically coupled to a power supply to apply a voltage to the brush hairs.

**25 Claims, 23 Drawing Sheets**